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RICHARD E. STANLEY, JR.			ZERVIGON, RUDY	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/658,988	DAWS ET AL.	
<b>Examiner</b>	<b>Art Unit</b>		
Rudy Zervigon	1792		

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 19 June 2008.
- 2a) This action is **FINAL**.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 24-27 and 29-42 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 24-27 and 29-42 is/are rejected.
- 7) Claim(s) 28 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 09 September 2003 is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Affidavit***

1. The affidavit under 37 CFR 1.132 filed June 19, 2008 is insufficient to overcome the rejection of claims 24-27 and 29-42 based upon Christin et al. (US 5,904,957 A) as set forth in the last Office action because: Applicant's showing is not commensurate in scope with the claims. The Examiner applies the broadest reasonable interpretation of "sealed preheater". It is well established that claim terms are given their "plain meaning" according to MPEP 2111.01: Claim terms are presumed to have the ordinary and customary meanings attributed to them by those of ordinary skill in the art. Sunrace Roots Enter. Co. v. SRAM Corp., 336 F.3d 1298, 1302, 67 USPQ2d 1438, 1441 (Fed. Cir. 2003); Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc., 334 F.3d 1294, 1298 67 USPQ2d 1132, 1136 (Fed. Cir. 2003).

2. In view of the foregoing, when all of the evidence is considered, the totality of the rebuttal evidence of nonobviousness fails to outweigh the evidence of obviousness.

### ***Claim Objections***

3. Claim 28 objected to because of the following informalities: Claim 28 was cancelled in the July 10, 2007 amendment. The February 20, 2008 claim 28 will be treated as a new claim when the proper fee for adding a claim is charged. In the present action, claim 28 is treated as cancelled per the July 10, 2007 amendment. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 24, 25, 29-35, and 36-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Christin et al. (US 5,904,957 A). Christin teaches a furnace (19, 11a,b; Figure 2) for densifying a number of porous structures (12; Figure 2; column 5, lines 61-67) stacked adjacent each other in a plurality of stacks (see plural lowest 30; Figure 2; column 6, lines 49-58), (see plural lowest 30; Figure 2; column 6, lines 49-58), each of said stacks (see plural lowest 30; Figure 2; column 6, lines 49-58) being supported by a base plate (15a; Figure 2) with a top surface of said base plate (15a; Figure 2) being disposed below a lowest porous structure (12; Figure 2; column 5, lines 61-67) in each of said stacks (see plural lowest 30; Figure 2; column 6, lines 49-58), wherein each of said stacks (see plural lowest 30; Figure 2; column 6, lines 49-58) comprise a center opening region (31; Figure 2) and an outer region (36; Figure 2), the furnace (19, 11a,b; Figure 2) comprising an inlet duct (16; Figure 2) and an outlet duct (17; Figure 2); a sealed (compare with Applicant's element 18 Figure 1) preheater (20; Figure 2; column 6; lines 10-20) in communication with said inlet duct (16; Figure 2) and a discharge opening (holes in 20; Figure 2) of said preheater (20; Figure 2; column 6; lines 10-20), wherein substantially all of a gas flow entering said inlet duct (16; Figure 2) passes through said preheater (20; Figure 2; column 6; lines 10-20) and exits said discharge opening (holes in 20; Figure 2); an inlet opening (holes of lowest 15, not labelled; Figure 2) extending through said base plate (15a; Figure 2) in communication with said discharge opening (holes in 20; Figure 2) and said center opening region (31; Figure 2); and a plurality of openings (openings in 15a; Figure 2) extending through said base plate (15a; Figure 2) in communication with said discharge opening (holes in 20; Figure 2) and said outer region (36; Figure 2), said plurality of openings (openings in 15a; Figure 2) being disposed around each of said stacks (see plural lowest 30; Figure 2; column 6, lines 49-

58) and being in proximity to the entire outer region (36; Figure 2) of each of said stacks (see plural lowest 30; Figure 2; column 6, lines 49-58); wherein a size of said inlet opening (holes of lowest 15, not labelled; Figure 2) controls said gas flow to said center opening region (31; Figure 2) wherein a predetermined first portion of said gas passes through said inlet opening (holes of lowest 15, not labelled; Figure 2) to said center opening region (31; Figure 2) and a remaining predetermined second portion passes below said top surface of said base plate (15a; Figure 2) and through said plurality of openings (openings in 15a; Figure 2) (volume within 25+22a; Figure 2) to said outer region (36; Figure 2), as claimed by claim 24 – Applicant's claim requirement of “first portion”, “second portion”, and “said inlet duct and said passageway being disposed below a lowest porous structure in said stack” of the process gas are claim requirements of intended use of the pending apparatus claims. The Apparatus of Figure 2 can be partially loaded with porous structures (12; Figure 2; column 5, lines 61-67), for example from 15b and above, to meet the claim requirement of “lowest porous structure”.

Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter, 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963); MPEP 2111.02).

Christin further teaches:

- i. The furnace (19, 11a,b; Figure 2) according to claim 24, further comprising a hole (holes of lowest 15, not labelled; Figure 2) receiving said gas from said discharge opening (holes in 20; Figure 2) and a passageway (volume within 25+22a; Figure 2) extending from said hole (holes of lowest 15, not labelled; Figure 2) to said outer region (36; Figure 2) said second portion passing through said passageway to said plurality of openings (openings in 15a; Figure 2), as claimed by claim 25. Applicant's claim requirement of "first portion", "second portion", and "said inlet duct and said passageway being disposed below a lowest porous structure in said stack" of the process gas are claim requirements of intended use of the pending apparatus claims. The Apparatus of Figure 2 can be partially loaded with porous structures (12; Figure 2; column 5, lines 61-67), for example from 15b and above, to meet the claim requirement of "lowest porous structure".
- ii. The furnace (19, 11a,b; Figure 2) according to claim 24, wherein said first portion is between about 60% to 80% of said gas and said second portion is between about 40% to 20% of said gas – claim 29 – Applicant's "first portion" and "second portion" is not structural recitation. See above.
- iii. The furnace (19, 11a,b; Figure 2) according to claim 24, wherein said first portion is between about 15% to 35% of said gas and said second portion is between about 85% to 65% of said gas – claim 30 – Applicant's "first portion" and "second portion" is not structural recitation. See above.
- iv. The furnace (19, 11a,b; Figure 2) according to claim 24, further comprising spacers (33; Figure 2) disposed between adjacent porous structures (12; Figure 2; column 5, lines 61-67) in each of said stacks (see plural lowest 30; Figure 2; column 6, lines 49-58) thereby forming open

passages (34; column 6, lines 58-67) therebetween, wherein some of one of said first and second portions of said gas passes between said center opening region (31; Figure 2) and said outer region (36; Figure 2) through said open passages, as claimed by claim 31. Applicant's claim requirement of "first and second portions of said gas" is a claim requirement of intended use of the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter, 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963); MPEP 2111.02).

v. The furnace (19, 11a,b; Figure 2) according to claim 24, further comprising a top support plate (26; Figure 2) disposed away from one of the porous structures (12; Figure 2; column 5, lines 61-67) at an end of each of said stacks (see plural lowest 30; Figure 2; column 6, lines 49-58) opposite said base plate (15a; Figure 2) thereby blocking a portion of said first portion of gas from passing out of said center opening region (31; Figure 2) at said end and thereby forming an open passage (holes in 26, not labelled; Figure 2) therebetween wherein some of said gas passes between said center opening region (31; Figure 2) and said outer region (36; Figure 2) through said open passage (holes in 26, not labelled; Figure 2), as claimed by claim 32

vi. The furnace (19, 11a,b; Figure 2) according to claim 24, further comprising a top support plate (26; Figure 2) disposed at an end of each of said stacks (see plural lowest 30; Figure 2; column 6, lines 49-58) opposite said base plate (15a; Figure 2) thereby blocking most of said

first portion of gas from passing out of said center opening region (31; Figure 2) at said end, said top support plate (26; Figure 2) comprising at least one hole (not labelled; Figure 2) adjacent said center opening region (31; Figure 2) and extending therethrough, wherein at least some of said gas passes out of said center opening region (31; Figure 2) at said end through said hole (not labelled; Figure 2), as claimed by claim 33

vii. The furnace (19, 11a,b; Figure 2) according to claim 24, further comprising a cap (26; Figure 2) disposed at one end of each of said stacks (see plural lowest 30; Figure 2; column 6, lines 49-58) and extending partially into said center opening region (31; Figure 2) thereby blocking most of said first portion of gas from passing out of said center opening region (31; Figure 2) at said end, said cap (26; Figure 2) comprising at least one longitudinal hole (not labelled; Figure 2), wherein at least some of said gas passes out of said center opening region (31; Figure 2) at said end through said longitudinal hole (not labelled; Figure 2), as claimed by claim 34

viii. The furnace (19, 11a,b; Figure 2) according to claim 24, further comprising a top support plate (26; Figure 2) disposed at an end of the each of said stacks (see plural lowest 30; Figure 2; column 6, lines 49-58) opposite said one end, wherein said top support plate (26; Figure 2) comprises an exit hole (not labelled; Figure 2) adjacent said center opening region (31; Figure 2), said top support plate (26; Figure 2) blocking said outer region (36; Figure 2) whereby substantially all of said second portion of gas passes through one or more of said exit holes (not labelled; Figure 2), as claimed by claim 36

ix. The furnace (19, 11a,b; Figure 2) according to claim 24, further comprising a hole (holes of lowest 15, not labelled; Figure 2) receiving said gas from said discharge opening (holes in 20;

Figure 2) and a passageway (volume within 25+22a; Figure 2) extending from said hole (holes of lowest 15, not labelled; Figure 2) to said outer region (36; Figure 2) said second portion passing through said passageway to said plurality of openings (openings in 15a; Figure 2), and a distributor (25; Figure 2), wherein said hole (holes of lowest 15, not labelled; Figure 2) and said passageway (volume within 25+22a; Figure 2) extend through said distributor (25; Figure 2), said hole (holes of lowest 15, not labelled; Figure 2) being in communication with said inlet opening (holes of lowest 15, not labelled; Figure 2), wherein said distributor (25; Figure 2) is disposed between a floor plate (11a; Figure 2) of the furnace (19, 11a,b; Figure 2) and said base plate (15a; Figure 2), and wherein said passageway (volume within 25+22a; Figure 2) passes said second portion to a space between said floor plate (11a; Figure 2) and said base plate (15a; Figure 2); wherein said first portion is between about 60% to 80% of said gas and said second portion is between about 40% to 20% of said gas (“first portion”, “second portion”; see above); and further comprising spacers (33; Figure 2) disposed between adjacent porous structures (12; Figure 2; column 5, lines 61-67) in the each of said stacks (see plural lowest 30; Figure 2; column 6, lines 49-58) thereby forming open passages (34; column 6, lines 58-67) therebetween, wherein some of said gas passes from said center opening region (31; Figure 2) to said outer region (36; Figure 2) through said open passages – claim 38. Applicant’s claim requirement of “first portion”, “second portion”, and “said inlet duct and said passageway being disposed below a lowest porous structure in said stack” of the process gas are claim requirements of intended use of the pending apparatus claims. The Apparatus of Figure 2 can be partially loaded with porous structures (12; Figure 2; column 5, lines 61-67), for example from 15b and above, to meet the claim requirement of “lowest porous structure”.

x. The furnace (19, 11a,b; Figure 2) according to claim 38, further comprising a top support plate (26; Figure 2) disposed away from one of the porous structures (12; Figure 2; column 5, lines 61-67) at an end of the each of said stacks (see plural lowest 30; Figure 2; column 6, lines 49-58) opposite said one end thereby blocking a portion of said first portion of gas from passing out of said center opening region (31; Figure 2) at said end and thereby forming an open passage (holes in 26, not labelled; Figure 2) therebetween wherein some of said first portion of gas passes from said center opening region (31; Figure 2) to said outer region (36; Figure 2) through said open passage (holes in 26, not labelled; Figure 2), as claimed by claim 39

***Claim Rejections - 35 USC § 103***

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claim 27, 37, 41, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christin et al. (US 5,904,957 A). Christin is discussed above. Christin further teaches:

i. The furnace (19, 11a,b; Figure 2) according to claim 24, further comprising a top support plate (26; Figure 2) disposed at an end of the each of said stacks (see plural lowest 30; Figure 2; column 6, lines 49-58) opposite said one end, wherein said top support plate (26; Figure 2) comprises an exit hole (not labelled; Figure 2) adjacent said center opening region (31; Figure 2) – claim 37

ii. The furnace (19, 11a,b; Figure 2) according to claim 41, further comprising a top support plate (26; Figure 2) disposed away from one of the porous structures (12; Figure 2; column 5, lines 61-67) at an end of the each of said stacks (see plural lowest 30; Figure 2; column 6, lines 49-58) opposite said one end thereby blocking most of said first portion of gas from passing out

of said center opening region (31; Figure 2) at said end and thereby forming an open passage (holes in 26, not labelled; Figure 2) therebetween wherein some of said gas passes from said center opening region (31; Figure 2) to said outer region (36; Figure 2) through said open passage (holes in 26, not labelled; Figure 2); said top support plate (26; Figure 2) comprising at least one hole (not labelled; Figure 2) adjacent said center opening region (31; Figure 2) and extending therethrough, wherein at least some of said gas passes out of said center opening region (31; Figure 2) at said end through said hole (holes of lowest 15, not labelled; Figure 2) – as claimed by claim 42

Christin does not teach:

i. The furnace according to Claim 25, wherein said inlet opening (holes of lowest 15, not labelled; Figure 2) comprises said hole and a smaller, upper hole wherein said hole is a larger, lower hole, wherein said passageway (volume within 25+22a; Figure 2) extends through said base plate (15a; Figure 2) to an outer edge of said base plate (15a; Figure 2), as claimed by claim 27

ii. a smaller hole away from said exit hole (not labelled; Figure 2), said top support plate (26; Figure 2) blocking said outer region (36; Figure 2) whereby most of said second portion of gas passes through one or more of said exit holes (not labelled; Figure 2) and at least some of said second portion passes through one or more of said smaller holes (11a/16 interface; Figure 2) – claim 37

iii. The furnace (19, 11a,b; Figure 2) according to claim 24, further comprising a hole (holes of lowest 15, not labelled; Figure 2) receiving said gas from said discharge opening (holes in 20; Figure 2) and a passageway (volume within 25+22a; Figure 2) extending from said hole (holes

of lowest 15, not labelled; Figure 2) to said outer region (36; Figure 2), said second portion passing though said passageway to said plurality of openings (openings in 15a; Figure 2); wherein said inlet opening (holes of lowest 15, not labelled; Figure 2) comprises said hole (holes of lowest 15, not labelled; Figure 2) and a smaller, upper hole is a larger, lower hole, wherein said passageway (volume within 25+22a; Figure 2) extends through said base plate (15a; Figure 2) to an outer edge of said base plate (15a; Figure 2); wherein said first portion is between about 60% to 80% of said gas and said second portion is between about 40% to 20% of said gas; and further comprising spacers (33; Figure 2) disposed between adjacent porous structures (12; Figure 2; column 5, lines 61-67) in the each of said stacks (see plural lowest 30; Figure 2; column 6, lines 49-58) thereby forming open passages (holes in 26, not labelled; Figure 2) therebetween, wherein some of said first portion of gas passes from said center opening region (31; Figure 2) to said outer region (36; Figure 2) through said open passages (holes in 26, not labelled; Figure 2), as claimed by claim 41

It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the relative size of Christin's hole dimensions to "smaller" or "larger" holes.

Motivation to optimize the relative size of Christin's hole dimensions to "smaller" or "larger" holes is for controlling flow characteristics of Christin's apparatus as taught by Christin (column 1; lines 28-40). It is well established that changes in apparatus dimensions are within the level of ordinary skill in the art.(Gardner v. TEC Systems, Inc. , 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied , 469 U.S. 830, 225 USPQ 232 (1984); In re Rose , 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); See MPEP 2144.04)

8. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Christin et al. (US 5,904,957 A) in view of Porter; Cole D. et al. (US 5,626,680 A). Christin is discussed above. Christin does not teach the furnace (19, 11a,b; Figure 2) according to claim 34, further comprising a thermocouple wire installed through said longitudinal hole (not labelled; Figure 2) and extending through said center opening region (31; Figure 2), said thermocouple wire being connected to a thermocouple embedded in a sample porous structure, as claimed by claim 35. It would have been obvious to one of ordinary skill in the art at the time the invention was made to add Porter's thermocouple embedded wafer to Christin's apparatus.

Motivation to add Porter's thermocouple embedded wafer is for determining the "maximum acceptable stress limit to which a wafer can be exposed" as taught by Porter (column 6, lines 40-48)

9. Claim 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christin et al. (US 5,904,957 A) in view of Liu; Jingbao et al. (US 6,403,491 B1) and Porter; Cole D. et al. (US 5,626,680 A). Christin is discussed above. Christin does not teach:

i. The furnace (19, 11a,b; Figure 2) according to claim 39, further comprising a cap disposed at one end of the each of said stacks (see plural lowest 30; Figure 2; column 6, lines 49-58) of porous structures (12; Figure 2; column 5, lines 61-67) and extending partially into said center opening region (31; Figure 2) thereby blocking most of said first portion of gas from passing out of said center opening region (31; Figure 2) at said end, said cap comprising at least one longitudinal hole (not labelled; Figure 2), wherein at least some of said gas passes out of said center opening region (31; Figure 2) at said end through said longitudinal hole (not labelled; Figure 2); and a thermocouple wire installed through said longitudinal hole (not labelled; Figure

2) and extending through said center opening region (31; Figure 2), said thermocouple wire being connected to a thermocouple embedded in a sample porous structure, as claimed by claim 40

Liu teaches a cap (350a; Figure 4) for controlling gas flow in Liu's apparatus.

Porter teaches a thermocouple (96, 98; Figure 11; column 6, lines 24-30) embedded wafer (94; Figure 11).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add Liu's cap and Porter's thermocouple embedded wafer to Christin's apparatus.

Motivation to add Liu's cap is to facilitate process gas distribution as taught by Liu (column 14; lines 22-34). Motivation to add Porter's thermocouple embedded wafer is for determining the "maximum acceptable stress limit to which a wafer can be exposed" as taught by Porter (column 6, lines 40-48)

10. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Christin et al. (US 5,904,957 A) in view of Murugesh; Laxman et al. (US 6,450,117 B1). Christin is discussed above. Christin does not teach Christin's distributor (25; Figure 2) having a radial hole passageway. Murugesh teaches a similar reactor (30; Figure 3) with a gas distributor (65; column 3; lines 41-55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace Christin's distributor (25; Figure 2) with Murugesh's distributor (65; column 3; lines 41-55).

Motivation to replace Christin's distributor (25; Figure 2) with Murugesh's distributor (65; column 3; lines 41-55) is for controlling the location of process gas injection within reactors as taught by Murugesh (column 7, line 65 – column 8, line 7).

***Response to Arguments***

11. Applicant's arguments filed June 19, 2008 have been fully considered but they are not persuasive.

12. Applicant states:

“

In paragraph 4 of the Office Action, the Examiner has objected to claim 28 because the Applicant has allegedly failed to pay "the proper fee for adding a claim." (3/21/08 Office Action at 2). However, the Examiner has not explained what authority the Examiner is relying upon for this position. *Claim 28 was previously cancelled and was re-presented in the reply filed by Applicants on February 20, 2008.* There is currently 1 independent claim pending in the application--claim 24, and there are 18 dependent claims pending in the application--claims 25-42. Thus, the total number of claims for which a fee is due is 1 independent claim and 19 total claims

“

In response, the Examiner italicized Applicant's above statements that are not in accord with current amendment practice which requires newly added claims to continue numbering *after* the number of cancelled claims. The practice has been established for years and is rigorously described in 37 CFR 1.121 for novice practitioners:

“

(5) Reinstatement of previously canceled claim. **A claim which was previously canceled may be reinstated only by adding the claim as a “new” claim with a new claim number.**

“

Applicant states:

“

In particular, the claim language requires a "sealed preheater" in which "substantially all of a gas flow entering said inlet duct passes through said preheater and exits said discharge opening" of the preheater. Thus, the proper interpretation of the sealed preheater that is claimed is that the incoming gas flow from the inlet duct cannot freely escape from the sides of the preheater. (6/19/08 Rudolph Decl. ¶ 3). Instead, substantially all of the incoming gas flows through the preheater and exits the preheater through the discharge openings of the preheater. (6/19/08 Rudolph Decl. ¶3)

“

In response, the Examiner finds no support in the specification or the plain meaning accorded by the Examiner for the lengthy re-definition requiring that a "sealed preheater" is all of "incoming gas flow from the inlet duct cannot freely escape from the sides of the preheater". The Examiner suggests adding structural limitations to the claimed invention to structurally distinguish Applicant's "sealed" preheater with the prior art preheater.

Applicant states:

“

However, the claim language clearly distinguishes that the inlet opening and the plurality of openings are two different structures with two entirely different purposes. In particular, the inlet

opening is "in communication with.., said center opening region." By contrast, the plurality of openings are "in communication with.., said outer region" and are "disposed around each of said stacks and being in proximity to the entire outer region of each of said stacks." One embodiment of the claimed inlet opening 53 and the claimed plurality of openings 62, 74 is shown in Figure 4 of Applicants' specification. As further shown in Figure 1 of Applicants' specification, the inlet opening 53 is in communication with the center opening region 5, and the plurality of openings 62, 74 (shown in Figures 3 and 4) are in communication with...

"

In response, the Examiner finds no *claimed* structural or functional difference between Applicant's claimed inlet opening 53 and the claimed plurality of openings 62, 74 as shown in Figure 4. Effectively, Applicant's Figure 4 shows distributed holes, albeit by differing names, in plate 68, Figure 4. Indeed inlet opening 53 and the claimed plurality of openings 62, 74 as shown in Figure 4 do show holes of different diameters, however, this is not claimed. Likewise, holes in plate 15a can each be one of either "inlet opening" or "plurality of openings". Further, how are Applicant's "inlet opening" and "plurality of openings" structurally distinguishable in the *claimed* invention? The Examiner believes the as-claimed "inlet opening" and "plurality of openings" are indistinguishable as claimed and as shown in Figure 4. Applicant's later statements for specific openings being "in communication" with different "regions" does not appear to add any further structural limitations that distinguish the claimed invention from the cited prior art.

Applicant states:

"

Moreover, the Examiner has failed to show how the holes 15a in Christin et al. satisfies the additional limitations that the claimed plurality of openings be "disposed around each of said stacks and being in proximity to the entire outer region of each of said stacks." This limitation was added to the claims to distinguish the Examiner's prior argument that the clearance gap around the base plate 15a in Christin et al. satisfied the claimed second portion of gas. As now claimed, the plurality of openings must be disposed "around each" stack and must be "in proximity to the entire outer region of each of said stacks." However, in Christin et al., the holes 15a are clearly shown directly below the center opening region of each stack. The holes 15a in Christin et al. are not disposed "around each" stack and are not "in proximity to the entire outer region" of each stack.

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In response, the Examiner has already set forth that Christin identically teaches a plurality of openings (openings in 15a; Figure 2) being disposed around (in proximity to) each of said stacks (see plural lowest 30; Figure 2; column 6, lines 49-58) and being in proximity to the entire outer region (36; Figure 2) of each of said stacks (see plural lowest 30; Figure 2; column 6, lines 49-58). The Examiner has reevaluated his citation of Christin and believes that the application of Christin's structure in light of the claimed invention is grounded and should be sustained.

Applicant further states:

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Second, the last clause of claim 24 adds additional claim limitations that further define the structure of the claimed invention. Specifically, the "size of the inlet opening" controls the gas flow to the center opening region. This results in a predetermined first portion of gas passing

through the "inlet opening to said center opening region." The predetermined second portion of gas is required to pass "below said top surface of said base plate and through said plurality of openings to said outer region."

Importantly, this claim language requires two different portions of gas--a first portion that passes through the inlet opening to the center opening region, and a second portion that passes through the plurality of openings to the outer region. Thus, the gas flow that exits the discharge opening of the sealed preheater (i.e., "substantially all" of the gas flow) is divided by the inlet opening and the plurality of openings into two predetermined portions. The first portion passes through the inlet opening to the center opening region and is controlled by the size of the inlet opening. The second portion passes "below" the base plate and through the plurality of openings to the outer region

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In response, the Examiner maintains his position that claiming gas "poritons" is an intended use feature of the pending claims and that the Examiner has given a detailed articulation in demonstrating that Christin is capable of performing the intended use. When the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent (In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977); MPEP 2112.01). Further, Applicant's citation of Christin regarding the exclusivity of flows is inconsistent with the *natural law* as illustrated by Christin. When the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent (In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977); MPEP 2112.01).

***Conclusion***

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (571) 272-1442. The examiner can normally be reached on a Monday through Thursday schedule from 8am through 7pm. The official fax phone number for the 1792 art unit is (571) 273-8300. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (571) 272-1700. If the examiner can not be reached please contact the examiner's supervisor, Parviz Hassanzadeh, at (571) 272-1435.

/Rudy Zervigon/

Primary Examiner, Art Unit 1792